The tables serve to make clear the fact that at least as early as October 12th, hibernation had commenced, but that by October 20th only 28.3 percent were in that state, the remaining eventually emerging as adults. After October 20th, however, table IV shows that nearly 80 per cent of the parasites had not emerged up to the time of killing frosts (Nov. 20th and a few days earlier), or were hibernating. The data is not as conclusive as desirable, for it may be urged that the observations were not continued late enough to state definitely whether or not the adults issued after November 20th, and then hibernated. But as evidence against this, I offer the fact that adults failed to issue from 10 of these tagged hosts up to the middle of December, they having been carried to Washington, D. C., in vials and confined in the laboratory.

Another fact indicating hibernation as a larva in the host, is that no material increase in length of life could be noticed in the adults in the late part of October and in November. In reality, they seemed to perish more easily at that time than in the summer. During the observations, most of the adults issued during warm spells.

Increase in Numbers During a Season.

Assuming that the average number of eggs deposited by a female is 30, a conservative estimate, and that at least half of these will produce other females, the progeny of a single pair for such a season as 1904 in Texas would total to the unthinkable number of 3, 031, 721, 260, 073, 800, 781, 250, as shown in the accompanying table by generations.

Table V. Progeny of a Single Pair, by Generations.

Generation No.	No. of descendants.	Remarks.
1	30	Descendants of hibernating female.
2	450	
3	6750	
4	101,250	
5	1,518,750	
6	22,781,250	
7	341,718,750	
8	5,125,781,250	
9	76,886,718,750	
10	1,153,300,781,250	
11	17,299,511,718,750	
12	259,492,675,781,250	
13	3,892,390,136,718,750	
14	59,885,852,050,781,250	
15	898,287,780,761,718,750	
16	13,474,316,711,425,781,250	
17	202,114,750,671,386,718,750	
18	3,031,721,260,073,800,781,250	

All of this, of course, is purely speculation, for we have no means of actually obtaining vital statistics of this kind. No allowances have been made for mortality in the reproducing females, or in the young, and in order to make the calculation as conservative as possible, the totals should probably be halved, on the theory that but half of the female descendants in any one generation survive to reproduce. This would still leave us in a maze of unthinkable totals. The figures are merely introduced to show the possibilities in rapid reproduction present in this important egg-parasite, and no claim is made that they represent anything like actual fact.

LITERATURE REFERRED TO.

1892. Howard, Leland Ossian. Proc. U. S. Nat. Museum, Washington, XIV (1891), p. 577.

1905. Quaintance, Altus Lacy and Charles Thomas Brues. The Cotton Boll-worm. Bull. No. 50, Bureau Ent., U. S. Dep. Agric., Washington, p. 117.

1906. Froggatt, Walter. Agric. Gazette New South Wales, Sydney, XVII, pp. 390-391.